

HyperNet
PCI 10/100 TX

HYNEC52001

USER GUIDE

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interference in which case the user will be required to correct the interference at his own expense.

European Community (EC) Electromagnetic Compatibility Directive.

This equipment has been tested and found to comply with the protections requirements of European Emission Standard EN55022 and the Generic European Immunity Standard EN50082-1. This equipment is designed to operate in a domestic environment and as such is tested to the EN55022 ITE domestic emissions limit. The domestic immunity standard EN50082-1 calls for the following basic standards:

- (a) IEC 801-2 Electrostatic Discharge
- (b) IEC 801-3 RF Immunity
- (c) IEC 801-4 Transient Burst

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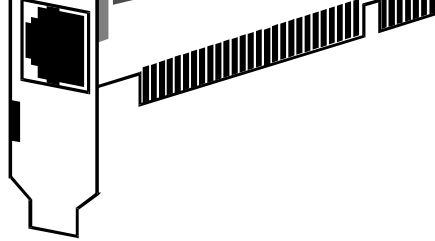
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The **HyperNet PCI 10/100** Adapter series is highly integrated and cost-effective single-chip adapter range that provides 32-bit performance, PCI bus master capability, and full compliance with Fast Ethernet 100Base-TX specifications. It also supports full-duplex operation, making possible 200Mbps of bandwidth with no additional cost, when connected to an appropriate switch.

The **HyperNet PCI 10/100** supports a wide selection of network operating systems, including Window NT, Windows 98, Windows 95, Windows 3.x and more.

The **HyperNet PCI 10/100** Adapter series is a dual-speed adapter connected to an Ethernet network with a single RJ-45 connection over unshielded twisted-pair (UTP) cable. The adapter support 10Mbps and 100Mbps Ethernet networks. On power-up, the adapter can use auto-negotiation to automatically determine line operating conditions.

- When the adapter is connected to a hub that supports 10Base-T Ethernet (10Mbps), it switches to a network speed of 10Mbps.
- When the adapter is connected to a hub that supports 100Base-TX Fast Ethernet (100Mbps), it switches to a network speed of 100Mbps.



Features

- PCI 32-Bit bus-mastering architecture speeds data transfers between your PC and the network, without burdening the PC's processor
- Autonegotiation, sensing and switching between 10Mbps and 100Mbps operation
- Full Duplex capabilities - Independent receive and transmit circuits allow for full duplex operation at both 10Mbps and 100Mbps, giving the Card a maximum throughput of 200Mbps
- A Single RJ-45 female connector supports both 10Mbps and 100Mbps operation
- Supports all major Network Operating Systems, including Windows 98, Windows 95, Windows NT, Novell NetWare
- Configuration is simplified by PCI Plug and Play.
- Supports the Desktop Management Interface (DMI) Revision 2.0

If you do not have each of these items, contact your supplier before proceeding further.

Static Electricity Warning

Static electricity is accumulated naturally in the human body, and can be discharged through electrical components by touching them. This shock can potentially cause permanent internal damage to the component.

When installing the adapter, please observe the following precautions:

- Discharge yourself before commencing by touching a grounded metal appliance, such as the metal frame of a computer - while it is tuned off, but still plugged into the wall socket.
- Hold the adapter or any other boards by their edges only. Never touch any exposed pins on the adapter.
- If possible, install the adapter as soon as you remove it from its anti-static bag, without putting it down. If you must put it down, place it on the anti-static bag in which it was packed.
- Do not place the adapter on any metal surface.

- Turn OFF the power to the computer to prevent any accidental damage.
- Remove your computer's cover (refer to your computer owner's manual).
- Select an available PCI expansion slot which supports Bus Master mode, and remove slot cover. Make a note of the slot number (if one is printed on the motherboard, next to this slot).
- Carefully install the adapter by firmly pressing the card into the slot which you have chosen, and applying even pressure until the adapter is completely seated in the slot.
- Fasten the retaining bracket with the screw on the slot cover. Make sure the adapter is properly aligned.
- Replace the system box cover and fasten it.

Connecting to the Network

This section describes how to connect 10Mbps or 100Mbps network cables to the HyperNet PCI 10/100 series adapter. The backplate of the HyperNet PCI 10/100 series adapter contains one RJ-45 connector. This adapter can use auto-negotiation to automatically determine line operating conditions, such as 10Base-T, 100Base-TX, or a corresponding Full-Duplex mode based on the type of HUB to which it is connected.

For 10Base-T Ethernet networks:

Use Category 3, 4, or 5 UTP cabling.

Configuring the PCI 10/100 Adapter

PCI Computer with PnP Auto-Configuration

Before installing your Hypertec PCI 10/100 Adapter, try to establish whether your PC has PCI PnP Auto configuration. In most cases, the PCI computer will be configured automatically by the system's BIOS during boot up. The BIOS automatically assigns the I/O base address and IRQ to the card for proper operation.

PCI Computer without PnP Self-Configuration

In rare cases, some PCI computers require additional configuration steps in order to install a PCI adapter. In such an event we recommend the following:

- Make sure that the BIOS is set up correctly. In some PCI computers, you may need to enable the PCI slot by using the BIOS setup program, or motherboard jumper changes.
- Choose a PCI Slot number to use. Remember the PCI Slot number where the adapter card was installed, as you need to set it up as a Bus Master (Enabled).
- Examine the reserved interrupts (IRQs) and/or memory address for ISA adapters. The PCI card will be prevented from using the same settings as the ISA cards are using.

or BIOS for use with PCI adapters.

Checking card operation

The Adapter provides two LEDs to indicate operation:

FDX (Full Duplex)	Steady Green Light indicates the connection to a full duplex switch port.
LK/ACT (Link/Activity)	Steady Green Light indicates an active connection between the adapter and the hub/switch port. Flashing Green Lights indicates data transmission

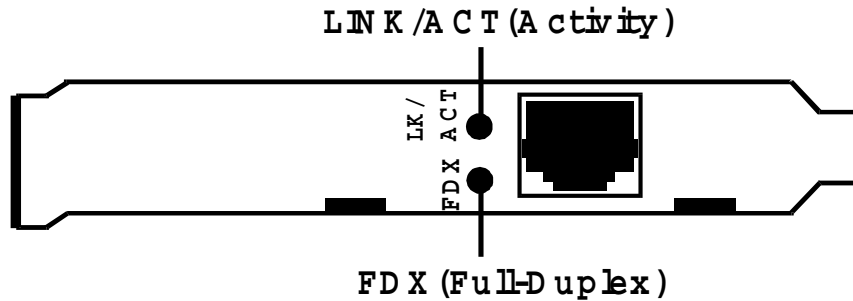


Figure 2. PCI 10/100Base series Adapter LED indicators

driver directory.

For more details of the loading procedure for software drivers, please execute the HELP8139.EXE program.

If at any time during installation you experience difficulties, please contact Hypertec Technical Support on +44 1488 686844 (01488 686844 in the UK).

The setup program can view current configuration and run diagnostics on the HyperNet PCI 10/100 series Adapters. This testing includes three separate procedures:

- View Current Configuration
- Setup New Configuration
- Run diagnostics Menu

Adapter cannot connect to the network

Make sure that the cable is installed properly. The network cable must be securely attached to all connections. If the cable is attached, but the problem persists, try using a different cable.

Note: If you're operating at 100 Mbps, you must use UTP Category 5 wiring.

If you're directly connecting two workstations (no hub), use a cross-over cable.

- Check the LED lights on the adapter. These lights help to indicate if there's any problem with the connector, cables, or hub.
- The Link LED light is ON when the adapter receives a Link pulse from the Ethernet Hub or card.
- If the Link LED light is off, it may be caused by a bad connector, bad cable, or any problem with the hub.
- The ACT LED light is flashing when there's transmitting or receiving activity on the network.

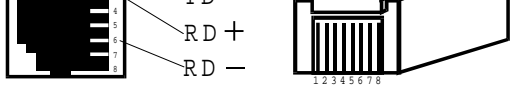


Figure A-1 show the PCI 10/100BaseTX RJ-45 Connector Pin Assignments

Note: The Pin assignments are identical for 10Base-T and 100Base-TX, by using UTP cable.

Network cabling

In Fast Ethernet 100Base-TX, the cable, quality, distance, and connectors must comply with the EIA/TIA 568 “Commercial Building Wiring Standard”.

IEEE 802.3u Specification: The 100Base-TX specification supports 100 Mbps transmission over two of four pairs of twisted Ethernet wiring. In two pair wiring, one pair of wires is used for transmission, and the second is used for collision detection and receiving.

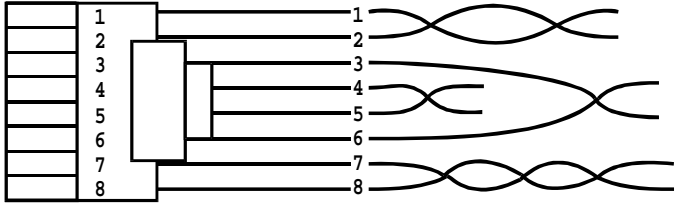


Figure B-1 show the Unshielded Twisted Pair Wiring

Note: For the 10/100 Mbps twisted pair cable, pins 1&2 must be a pair and pins 3&6 must also be a pair. Each pin must connect straight to the other end of the

Length - 125.4mm
Height - 42.3mm

LED Indicators:

Full Duplex, Link/Activity

Operating Temperature:

0°-55°C (32°F-131°F)

Operating Humidity:

0% - 90% non-condensing

Storage:

-20°C-65°C (-4°F-149°F)

Ethernet Protocols:

IEEE 802.3U (Fast Ethernet, 100Base-TX)

IEEE 802.3 (Ethernet, 10Base-T)

Data Transfer Rate:

100 or 10 Mbit/sec

200 or 20Mbit/sec Full Duplex

Connector:

Unshielded RJ-45 female connector.

EMI:

FCC Class B

European standards EN55022 and EN50082-1

disaster, misuse, abuse or non-hypertec modification of the product.

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